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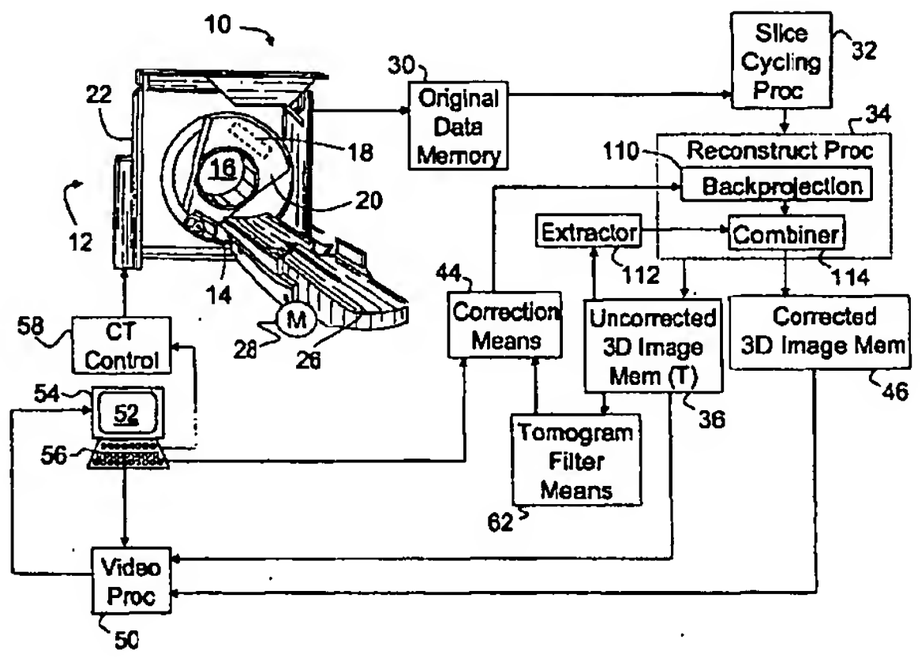
(54) Title: IMAGE-WIDE ARTIFACTS REDUCTION CAUSED BY HIGH ATTENUATING OBJECTS IN CT DEPLOYING VOXEL TISSUE CLASS



(57) Abstract: A reconstruction processor (34) reconstructs acquired projection data (S) into an uncorrected reconstructed image (T). A classifying algorithm (66) classifies pixels of the uncorrected reconstructed image (T) at least into metal, bone, tissue, and air pixel classes. A clustering algorithm (60) iteratively assigns pixels to best fit classes. A pixel replacement algorithm (70) replaces metal class pixels of the uncorrected reconstructed image (T) with pixel values of the bone density class to generate a metal free image. A morphological algorithm (80) applies prior knowledge of the subject's anatomy to the metal free image to correct the shapes of the class regions to generate a model tomogram image. A forward projector (88) forward projects the model tomogram image to generate model projection data (S_{model}). A corrupted rays identifying algorithm (100) identifies the rays in the original projection data (S) which lie through the regions containing metal objects. A corrupted rays replacement algorithm (102) replaces the corrupted regions with corresponding regions of the model projection data to generate corrected projection data (S'). The reconstruction processor (34) reconstructs the corrected projection data (S) into a corrected reconstructed 3D image (T').

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